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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/909,809	07/23/2001	Mayumi Tomikawa	522.1921D3	6031

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EXAMINER

DEJONG, ERIC S

ART UNIT	PAPER NUMBER
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1631

DATE MAILED: 07/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/909,809

Applicant(s)

TOMIKAWA ET AL

Examiner

Eric S. DeJong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16, 17 and 23-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16, 17, and 23-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2 sheets</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

The Information Disclosure Statement (IDS) filed by applicants on 23 July 2001 was inadvertently not initialed by the Examiner and included in the previous Office action, mailed 02 February 2005. The references on said IDS have been considered and initialed by the Examiner as indicated in the form PTO-1449 included with this Office action.

Withdrawal of Claim Rejections - 35 USC § 101

The previous rejection of claims 16 and 17 under 35 § USC 101 is withdrawn in view of arguments presented by applicants. Previously presented claim 23 was not included under this rejection, contrary to applicants indication that claim 23 was included under this rejection.

Withdrawal of Double Patenting Rejection

The previous rejection of claims 16, 17, and 23 under 35 USC §101 for obviousness type double patenting is withdrawn in view of applicants arguments

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 16, 17, and 23-25 are rejected under 35 U.S.C. 102(b) as being anticipated by US 4,853,871 or Holak et al. (J. Mol. Biol., 210, 653-648) or Flaherty et al. (Proc. Natl. Acad. Sci. USA, 88, 5041-5045) or Mosimann et al. (Proteins: Structure, Function and Genetics, 14, 392-400, 1992). This rejection is maintained reiterated and from the previous Office Action and necessitated by amendment.

The instant claims are drawn to methods and a system of analyzing three-dimensional structures by generating generic optimized correspondences between set points describing two three-dimensional structures and calculating root mean square deviations (RMSD) between corresponding elements. As such, the claims read on any reference teaching comparison of two three dimensional structures and calculating RMSD therefor. The following references are exemplary of this commonly used approach to comparing 3D structures.

US 4,853,871 describes a method and means for evaluating protein's structure comprising comparing first set of three-dimensional coordinates of two amino acid residues with geometric conformation (i.e., with second set of three-dimensional coordinates) possessed by atoms of a disulfide bond. See for example claims 1, 2, and 6 and the summary of the invention, column 3, line 35 through column 4, line 40.

Holak et al. teach comparing three-dimensional structures of 34 structures of trypsin inhibitor with minimized mean structure, and calculating RMSD between structures. See abstract.

Flaherty et al. describe a comparison of muscle actin and heat shock cognate protein and demonstrate that calculation of RMSD between comparable spatial fragments shows close similarity of the structures of these proteins. See abstract.

Mosimann et al. describe a process for comparison of molecular models of P-30 protein and pancreatic RNAase. The all atom superposition of active site residues of the P-30 and an identically minimized RNAase structure has a root square deviation of 0.52 Å. See abstract.

Response to Arguments

Applicant's arguments filed 01 June 2005 have been fully considered but they are not persuasive.

Applicants argue for each prior art reference forming the basis of the above rejections that the present invention is directed to a method and apparatus to determine spatially similar portions of substances by analyzing three-dimensional structures of the substances including a first structure expressed by three-dimensional coordinates of elements belonging to a first point set and a second structure expressed by three dimensional coordinates of elements belonging to a second point set and automatically determining a distance between the elements of the first point set and elements of the second point set that have an optimal correspondence. As such, this recitation in the instant claims has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the

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process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Thus, the limitations recited in the claimed steps have been treated as claim limitation with patentable weight. As discussed in the above rejections, the Examiner has construed the term "correspondence" recited in the instant claims broadly as any comparison of two three-dimensional structures. Applicants arguments do not address this basis of the previously presented rejections. Therefore the claims remain broadly interpreted as being drawn to analyzing three-dimensional structures by generating generic optimized correspondences between set points describing two three-dimensional structures and calculating root mean square deviations (RMSD) between corresponding elements. Applicants characterization of the above cited references do not contradict the broadly interpreted claims. Thus applicants arguments are not found persuasive.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry of a general nature or relating to the status of this application should be directed to Legal Instrument Examiner, Tina Plunkett, whose telephone number is (571) 272-0549.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric S. DeJong whose telephone number is (571) 272-6099. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin Marschel, Ph.D. can be reached on (571) 272-0718. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

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John S. Brusca 21 July 2005
JOHN S. BRUSCA, PH.D
PRIMARY EXAMINER